

DEPARTMENT OF APPLIED SCIENCES AND HUMANITIES

Advanced Research Lab of Physics



The department has a series of fine and high-end research facilities to carry out advanced materials science experimental and theoretical research.

Following details of the instrumentation available in our research lab;

RF Sputtering System (Thin Film Deposition Facility)

The RF Sputtering System is a physical vapor deposition (PVD) unit utilized for growing high-purity, uniform thin films of insulating, dielectric, semiconductor, and conductive materials. By employing a high-frequency alternating radio frequency power source (13.56 MHz), this system prevents charge accumulation on non-conductive targets, allowing reliable deposition for advanced material research.

There are several more instruments which are listed below:

- 1. Simultaneous Thermal Analyzer system (DTA/TGA/DSC)**
 - (i) Thermobalance with TG-DTG-T Registration option DTA, 20 up to 1550° C**
 - (ii) Thermobalance basic unit**
 - (iii) Amplifier for balance**
 - (iv) Sample holder A1203**
 - (v) DTA**
 - (vi) HDSC**
 - (vii) Crucible 0.3 ml**
 - (viii) Cap**
 - (ix) Protection tube A1203**
 - (x) Furnace**
 - (xi) Thyristor Power unit 3.5 KVA**
 - (xii) Controller card**
 - (xiii) Software basic module**
 - (xiv) Win-Tw**
- 2. Multiplexer/Demultiplexer Training kit**
- 3. Advanced digital Transmitter/Receiver kit**
- 4. Fibre optics power meter**
- 5. Laser diode and glass fibre-based laser training kit**
- 6. Fibre optic connection kit**
- 7. HIOKI Model 3532-50 LCR Hi-Tester 42 Hz to 5 mHz**
- 8. 9262 Test Fixture Direction connection type**
- 9. Model 9700-10 Head Amp unit**
- 10. PICOAMMETER / Voltage source model 6487/E**
- 11. KUSB-488**

- 12.LOW NOISE TRIAX Cable model 237-ALG-2**
- 13. NBC Brand atmosphere-controlled tubular furnace**
- 14.Gas control unit**
- 15.Flang with O-ring**
- 16.C.S.T charge**
- 17.Double Beam PC Based UV-spectrophotometer UV 5704 S S**
- 18.Pentium-III PC with accessories for UV 570458**
- 19.Inverted metallurgical microscope without CCTV**
- 20.Micrometer WF 10**
- 21.Grain size eyepiece**
- 22.Grain size turret eyepiece**
- 23.Electronic Analytical Balance made in Germany, capacity 120 gm, accuracy 0.1mg, calib-internal**
- 24.Comparator 2000 Lovibono make**
- 25Automatic low water level cut-off device**
- 26.Digital DO meter**
- 27.BOD incubator**
- 28.Interior illuminate**
- 29Automatic timer**
- 30.Arrangement for incubation of CO₂**
- 31.CO₂ cylinder**
- 32.Air compressed**
- 33.Humidity control**
- 34.Distillation Apparatus**
- 35.Hydraulic Press**
- 36.Microprocessor-based programmable furnace max. temp 1400°C**
- 37.Gas Chromatograph model ultima 2100**